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Too Big to Bail: The "Paulson Put," Presidential Politics, and the Global Financial Meltdown

Part I: From Shadow Financial System to Shadow Bailout

***Abstract*:** This paper analyzes how a world financial meltdown developed out of U.S. subprime mortgage markets. It outlines how deregulatory initiatives allowed Wall Street to build an entire line of new, risky financial products out of raw materials the mortgage markets supplied. We show how further bipartisan regulatory failures allowed these same firms to take on extreme amounts of leverage, which guaranteed that when a crisis hit, it would be severe. A principle focus is the "Paulson Put"—the effort by the U.S. Treasury secretary to stave off high-profile public financial bailouts until after the 2008 presidential election. The paper shows how the Federal Home Loan Bank System and other government agencies were successfully pressed into service for this purpose—for a while.

***Keywords**:* bank regulation, financial crisis, investment banks, political economy

In 2008, a strong whiff of millenarianism crept into American public life. As voters flocked to the primaries in startling numbers, many Democrats became convinced that the Second Coming lay just around the corner. By contrast, sentiment among

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Republicans was more somber, if equally chiliastic: They quaked at prospects of a dire Last Judgment on the administration of President George W. Bush in the November presidential election. Partisans of both parties also harbored fears of Armageddon in the Middle East, if for very different reasons. Still, on that classical day of reckoning, the Ides of March, when the Four Horsemen of the Apocalypse suddenly appeared over the offices of the giant brokerage firm of Bear Stearns in lower Manhattan, almost everyone was astounded.[1]

Most were equally taken aback when the Horsemen reappeared later in the summer over the Washington, DC, area headquarters of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)—the two giant government sponsored enterprises (GSEs) that support mortgage markets—and finally above the venerable investment banking firm of Lehman Brothers in New York in September. By then, however, the responses of U.S. policymakers were becoming as disorienting as anything the Horsemen did.

To the astonishment of the world, U.S. Treasury secretary Henry Paulson, Federal Reserve chair Ben Bernanke—both Republicans nominated to their positions by President George W. Bush—and New York Fed president Timothy Geithner responded to the Horsemen's initial appearance by introducing a visionary single-payer government insurance scheme—not for sick Americans, but for ailing financial houses. Stretching both law and precedent, they threw open the Federal Reserve's discount window not only to commercial banks but also to investment banks that were primary dealers in government securities. By special agreement with the Treasury, the New York Fed also took onto its books $30 billion of Bear Stearns's bad assets so that JPMorgan Chase could take over what remained of the Bear. On September 7, just days after the Republican National Convention's saturnalia glorifying free markets and the minimal state, Paulson and Bernanke dramatically confirmed the new collectivist course by taking control of Fannie Mae and Freddie Mac in the name of the people of the United States. At a stroke, the government acquired new gross liabilities equal to 40 percent of the U.S. gross domestic product.[2]

But on September 15—a date that will be forever emblazoned in the financial history of the world, alongside the fatal June 5, 1931, when German chancellor Heinrich Brüning repudiated reparations and precipitated chain bankruptcy in Western Europe (Ferguson and Temin 2003, 2004)—the reluctant revolutionaries had second thoughts. They decided to cross up markets and let the Horsemen trample Lehman Brothers.

This had fatal consequences. In the blink of an eye, the Horsemen rode down American International Group (AIG), Washington Mutual, and Wachovia—all giant financial institutions. They also set upon the crown jewels of American capitalism—Morgan Stanley and Goldman Sachs—before fanning out across the globe. Stock markets everywhere went into free fall as panicky investors drove yields on safer government securities down practically to zero—in effect signaling a preference for government bonds to all other assets in the world. As interbank markets ground to a terrifying halt, Paulson, Bernanke, and Geithner borrowed another page from Lenin (or, more accurately, Mussolini, for their clear intention was to support,

not replace, private markets) and effectively nationalized AIG. Then Paulson and Bernanke raced to Congress to confront it with a stunning choice: Pass at once a gigantic, ill-defined $700 billion asset-buying program that the Treasury would administer with no review or accountability or bear the responsibility for a real-life financial Armageddon.[3]

With the public seething and elites bitterly divided, the American political system seemed for a few vertiginous days on the verge of melting down itself. In the end an amended bailout bill passed, larded up with more pork than an Oscar Mayer refrigeration car.[4]

Shockingly, however, world markets just shrugged. They continued melting down. Eventually British prime minister Gordon Brown stepped in. Openly deriding Paulson's vague asset-buying proposal as a clueless giveaway of taxpayer money, Brown focused on recapitalizing British banks at a relatively stiff price. The amount injected was too small to solve the problem, and the government did not take the bad assets off the banks' books or force the banks to write them down; but next to the pathetic U.S. effort, Brown's plan almost glowed.[5] Along with the Irish government's decision to guarantee all deposits, it set off a competitive scramble among the G7 countries to ring fence their financial systems from total collapse via partial nationalizations, state loan guarantees, and extended insurance on bank deposits. The swift creation of relative safe havens in the big core capitalist countries triggered an enormous inflow of capital from developing countries into first world financial centers. Many investors dumped assets indiscriminately in their haste for safety. Financial systems in the developing world, including Eastern Europe, teetered on the brink of collapse. The U.S. Federal Reserve, which had already opened unlimited swap lines with several first world central banks, brushed aside concerns about multilateralism and opened new $30 billion swap lines for central banks in Mexico, Korea, Brazil, and Singapore (Guha 2008).

As this paper goes to press, the usual suspects—finance ministers, heads of state, leading bankers—are, like Humpty Dumpty's men, struggling to put all the pieces back together again. Their often discordant viewpoints, along with the changeover of the American presidency in the midst of the raging crisis, have triggered a torrent of commentary. But it seems clear that the stunning scale of the Four Horsemen's destructive romp has made it hard to come to grips with what has happened and why.

Some key points are obvious. The widely touted American investment banking–led model of global finance has plainly collapsed. All major American investment houses have either gone bankrupt or defensively transformed themselves into commercial bank holding companies. Out of the debris a new, universal bank–based financial system appears to be taking shape, a system in which preferential access to government aid and the discount window is likely to be pivotal.[6] The place of money market funds, hedge funds, and nonbanks in this new system is murky. What is clear is that a new round of "corporatism," in which the state moves more deeply into the day-to-day functioning of markets, is taking shape.

But the giant, ever-swelling tide of bailouts has done little more than stave off complete collapse. Most financial markets have not returned to anything like normalcy. Banks are not lending—though many are paying bonuses, lobbying, and making political campaign contributions—and private credit markets remain at least semifrozen. The U.S. Treasury is plainly "picking winners" in finance as other sectors of the economy queue up for bailouts of their own. With a new round of staggeringly expensive bank bailouts looming, the Federal Reserve is increasingly acting not to support the banking system but to replace it by proliferating special lending facilities faster than the mythical Greek monster Hydra grew heads.

Clearly, the long-running debates about the future of the international monetary system badly missed the mark. These all focused on the likelihood that foreign dollar holders—possibly China, or Japan, or major Arab oil exporters—might someday ring down the curtain on the system by dumping their holdings in response to unsustainable current account deficits.[7] This crisis, however, has "Made in America" stamped all over it; a complete breakdown of financial regulation lies at its heart.

Yet not only the public but also many participants in financial markets continue to shake their heads about precisely what happened and why nothing seems to be working very well, even though the Federal Reserve's balance sheet has almost tripled in size between the start of the crisis and the beginning of 2009.[8] How problems in one segment of the mortgage markets—subprime—led to a financial crisis that engulfed the whole world still baffles many. So does the response of the Treasury and the Fed. What explains Paulson, Bernanke, and Geithner's bewildering lurches back and forth between sotto voce socialism for the rich and starkly self-destructive reaffirmations of free enterprise? Specifically, why did they save Wall Street in March by bailing out Bear Stearns only to destroy it and the rest of the world in September by refusing to do the same thing for Lehman Brothers? And what explains Paulson's bewildering zigzags in justifying and implementing the bailout, as he first promoted buying assets then talked up capital injections only to come back after the election with a new template for socializing banking losses by providing what were in effect underpriced government-provided puts on the bad assets of Citigroup and Bank of America?[9]

This paper analyzes the world financial meltdown from its origins to Election Day 2008. It pays particular attention to the role the money-driven American political system played in every phase of the crisis. We suggest that the serial disasters had little to do with conventional "policy errors" or, as many have increasingly wondered, sheer incompetence, though both were plentifully in evidence. Instead, what we term the "Paulson Put" (on par with the fabled "Greenspan Put," which implicitly promised Fed action to stem steep market declines) is key to understanding what happened.[10]

The original idea of the Paulson Put was to stave off high-profile public financial bailouts until after the election, when they were less likely to trigger a political firestorm that could threaten existing wealth holders by opening up a Pandora's box of reform demands. The key expression here is "high profile," for the Paulson

Put had two distinct policy faces. One, already alluded to, embraced the highly visible adoption of "single-payer" government insurance for banks, investment houses, and Government Sponsored Enterprises (GSEs, Fannie Mae and Freddie Mac). The other was a much less heralded "Shadow Bailout" designed to prop up the financial system in ways that would attract as little attention as possible. This latter effort knit together another emergency safety net for banks in trouble out of separate threads that were each by themselves all but imperceptible: assistance on a gigantic scale to banks and thrifts from the obscure Federal Home Loan Bank System; a concerted effort to play down eventual taxpayer liabilities for Federal Deposit Insurance payouts; emergency purchases by the GSEs, especially Fannie Mae, of home mortgages and mortgage bonds to stem declines in those markets; and finally, unconventional expansions of the Federal Reserve's balance sheet.

Unfortunately, bursting asset bubbles nourished on high leverage are reverse Cinderella stories on steroids. At midnight the transit is not from beautiful dream to drab reality, but to the very gates of hell itself, as whole economies and credit systems crash for years (Koo 2008). By striving to put off a reckoning as long as possible, the Paulson Put guaranteed that the final cleanup bill would rise astronomically. In a political system in which "no new taxes" is an axiom of political life for both political parties, it also set off a desperate search for shortcuts that would not work—such as turning the Federal Reserve's balance sheet inside out—to avoid going to Congress.

Eventually the Paulson Put collapsed under the weight of all these contradictions. As Bear Stearns vividly illustrated, there was no unobtrusive way to stretch the Put to cover investment banks. That could only happen during a cataclysm. No less fatefully, involving the GSEs in the shadow bailout was quixotic. Already compromised by political pressures and past accounting scandals, the GSEs were too financially fragile to be used as safety valves. Paulson and Co.'s efforts to use them for this purpose pushed them over the edge, leading anxious foreign investors to dump their bonds and forcing the GSE's de facto nationalization.

In turn, that threw the switch on the doomsday machine—the disastrous series of actions and reactions that destroyed the (first) Paulson Put as well as all chances Republican Senator John McCain had of winning the presidency. First was the unpopular GSE bailout in the midst of the election campaign. Then, in convulsive reaction to furious critics in and out of the Republican Party, came the decision to let Lehman Brothers go bankrupt; this was, in effect, the definitive expiration of the original Paulson Put. The final part of our discussion traces how the original Paulson Put morphed into a newer, chastened version fixated on protecting existing shareholders in America's leading financial firms from dilution—a preoccupation that led directly to the meltdown of the whole world financial system, because it fatally compromised any chance of a serious bailout. As a result, the banking system remains crippled. The Federal Reserve, along with other central banks, is increasingly moving to fill the vacuum by directly making markets for many classes of assets, and the serious work of reconstructing the financial system has barely begun.

Because of its length, this paper has been divided for publication. The first half, presented here, traces how the Paulson Put emerged as a natural response to the financial hurricane that blew as the 2008 presidential election began. The discussion tackles the basic question posed earlier: How does a world crisis develop out of subprime mortgage markets? It outlines how deregulatory initiatives championed by both Republicans and Democrats allowed Wall Street to build an entire line of new, risky financial products out of raw materials the mortgage markets supplied. We also show how further bipartisan regulatory failures allowed these same firms to take on extreme amounts of leverage, which guaranteed that when a crisis hit, it would be severe. The collapse of the first Paulson Put and the ensuing world financial meltdown are analyzed in the second half of this paper, in the next issue of this journal.

Drivers of Crisis: Deregulation and the Shadow Financial System

Failed generals are frequently excoriated for fighting the last war. As the current financial crisis ripened between 2002 and 2007, however, the Treasury and the Fed notably failed to attain even that achievement. Their last war should have been the great stock market bubble that burst just as Bill Clinton exited the White House. The shortcomings in American economic institutions and policy making that this episode revealed were impossible to miss. Leaks of emails from lawsuits and a handful of official investigations (mostly mounted by state rather than federal officials) established beyond doubt that America's greatest financial houses had for years knowingly pushed stocks they well knew to be junk into the portfolios of unsuspecting brokerage clients. They had also colluded with managements of nonfinancial concerns, accountants, rating agencies, and armies of lawyers to misstate corporate earnings, backdate stock options held by top managements, and palm off enterprises that were hemorrhaging losses as paragons of financial rectitude and visionary entrepreneurialism (Partnoy 2003; Prins 2004; Stiglitz 2004).

Most importantly, the crisis highlighted the shallowness of efforts in the early 1990s to "better align" the interests of management with those stockholders by granting lavish stock options to managers. By 2001, the real pattern of incentives thus created was obvious: Top management placed large bets on whatever promised to drive up stock prices in the short run. As stocks leveled off, they started dumping their holdings, typically, as in the notorious case of Enron, while continuing to tout their firms' prospects to lower-level employees (whose pension agreements often barred them from selling out) and the public. Eventually the rats deserted the sinking ship, absconding with most of the money from their bonuses, skyrocketing salaries, forgiven loans from their firms, and backdated stock options (Millstein and McAvoy 2004; Monks 2007; Partnoy 2003; Prins 2004; and Stiglitz 2004).

The Fed's role in this debacle was hardly negligible. Early in the 1990s, as the U.S. economy pulled slowly out of its "jobless recovery," Fed chair Alan Greenspan held down interest rates while allowing the banks to dispense with setting aside

reserves against fluctuations in values of long-term government bonds (Stiglitz 2004). This allowed banks to recapitalize themselves by playing the yield curve (i.e., holding higher-yielding long bonds financed by cheaper overnight money) and raising charges on their customers, even as they hung back from the riskier business of making actual business loans.

Later, in the mid-1990s, with oil prices falling, American unions in retreat, and imports surging from Asia and the rest of the world, Greenspan stuck to his low interest rate policy. This created a stir. Conventional economic theory insisted that by then the economy must be on the verge of bumping up against its fabled "natural rate of unemployment." Persisting with low rates as that barrier was breached would, it was claimed, set off another round of inflation. Accordingly, inflation hawks, who since the 1980s periodically threaten to eclipse the American bald eagle as the national bird, sounded alarms (Stiglitz 2004).

But although the "natural rate" was an article of faith shared by both monetarists and conventional Keynesians, it was in fact a theory without any clear empirical referent: No one could authoritatively specify what the natural rate actually was at any point in time. Nor did the welter of claims springing up about how the rate could shift through time inspire much confidence (Galbraith 1997). Thus Greenspan, who assuredly understood how stock options were transforming corporate America's assessment of the risks of monetary tightening, persisted. In 1994, he did raise rates, generating a terrific reaction in markets around the world (Partnoy 2003; Stiglitz 2004). Thereafter he became very cautious indeed. As corporate profits and stock prices boomed, with few signs of inflation, his restraint transformed him into the cult hero of the "New Economy," the monetary "maestro" whose sure judgment world markets gratefully celebrated (Woodward 2000).

Eventually the wheels started coming off. Prices in the stock market raced upward, outrunning both real economic growth and corporate profits. Inflation hawks refocused their critique. They argued, with much better evidence, that the Fed's relatively easy monetary policy was fueling the stock market bubble. They accordingly redoubled pleas for rate hikes. Other analysts, including many who harbored no fears for the general price level, shared the conviction that the Fed should prudently choke off the bubble before it became dangerous by using its power to raise margin requirements on stock purchases.[11]

By then corporate profits and incomes of the super-rich were approaching proportions reminiscent of the Gilded Age or the Roaring Twenties (Piketty and Saez 1998). Greenspan elected not to change course. After making headlines by alluding to the possibility that stock prices might reflect "irrational exuberance," he declined to raise either rates or margin requirements. Though the minutes of the Federal Reserve Open Market Committee recorded the Fed chair's assurances to his colleagues that raising margin requirements would stop the boom in its tracks (Stiglitz 2004), in public Greenspan has since defended the decision by citing the difficulties of recognizing real bubbles and fears that any efforts to stop them would not work (Greenspan 2008). Prices frothed up, up, and away, until the crash.

If at First You Don't Succeed, Fail Again

As housing started bubbling up in the new millennium, it was déjà vu all over again. The Fed and Treasury (especially after Paul O'Neill's noisy departure) went missing in action. In an exact reprise of the 1990s, Greenspan was again holding down rates: In 2000, the justification was the need to avert Y2K problems associated with resetting computer calendars. In 2001, it was the bursting bubble. After 9/11, it was 9/11. Deflation, ran the argument, was a bigger threat than any asset bubble (Greenspan 2007a, 2007b).

Like stock prices in the 1990s, housing prices in much of the country jumped way out in front of the rest of the economy, while the general price level stayed flat (Shiller 2008). Critics familiar with the colossal real estate bubble engendered by the Japanese central bank when it froze interest rates at very low levels to hold down the yen in the wake of the Louvre Accord warned that the Fed risked repeating that disaster (Roach 2004). In the end Greenspan held down rates until June 2004, before starting to raise them in well-telegraphed quarter-point increments—and after delivering a notorious plug on behalf of adjustable rate mortgages (ARMs), whose interest rates reset as the Fed raised rates (Kirchhoff and Hagenbaugh 2004).[12] Some analysts then, and many more subsequently, argued that if Greenspan had raised rates earlier and faster, he could have aborted the bubble before it became dangerous.

Greenspan has since defended himself by observing that the Fed controlled only the shortest end of the yield curve and that it is long-term rates that are decisive for housing prices. These, he claims, were mysteriously falling all over the globe but not because of anything tangible he did (Greenspan 2008). His implication was that if low long rates led to a housing boom or credit crunch, he could not be blamed for it.

These claims are just close enough to the truth to be seriously misleading. First of all, long-term rates were indeed dropping around the world. But why is much less mysterious than Greenspan and many analysts swept up in the mentalité of central banking make it. Long-term bond issuance is confined mostly to the very largest economies—at most those of the G10 or so. Rates were dropping in most of these markets because of large-scale historical and institutional changes. In the Organization for Economic Cooperation and Development (OECD) countries, imports and foreign trade were rising, putting pressure on domestic wage bargaining (Canterbury 2000; Greenspan 2007b). In the meantime, the advent of the euro generalized the ultrastable deutsche mark to countries like Italy, Spain, and France that otherwise could never have borrowed so cheaply. The British Labour Party's conversion to neoliberalism under Tony Blair led his government to make the Bank of England independent of the government, which certainly improved bondholders' animal spirits. Meanwhile the Bank of Japan was closing in on any number of records for the lowest interest rates in world history, as it struggled to cope with the wreckage of the bubble it had created and then deflated through the 1990s.

In the United States there is no real doubt about why long rates of interest were dropping either. Encouraged by Clinton Treasury secretary Robert Rubin's much heralded "strong dollar" policy, countries around the world, especially in Asia, were pegging their currencies to the greenback or to currency baskets dominated by it. Others, notably Japan, also intervened from time to time in currency markets to protect their ability to export into the United States. These practices led to a vast accumulation of foreign exchange reserves and recycling of dollars, at first into Treasuries. Over time the dollar's stability and the low yield on short-term assets encouraged many to buy longer-term assets and the slightly riskier GSE bonds. Cascading demand for long-dated assets certainly pushed down long rates (Canterbury 2000; Warnock and Warnock 2005).

This hardly exonerates Greenspan. First of all, it is possible to exaggerate the Fed's helplessness. Part of Greenspan's mystique derived precisely from his status as the household god of world financial markets. Given the existing structures of financial intermediation, regulatory power, and, especially, Fed credibility on inflation, his Fed certainly retained some ability to nudge long rates most of the time. All that capital was, after all, lolling around in the United States precisely because it knew it was welcome; many central banks left the sums under their control in custody accounts at the Fed. Also, as Bernanke has since illustrated, the Fed could have bought or lent against long-dated government securities, a modern version of "Operation Twist" of the 1960s.[13]

The Centrality of Deregulation

What is truly disingenuous about Greenspan's defense, however, is the way it deflects attention from the disastrous role his laissez faire views on regulation played in setting the stage for the crisis. The case for putting the whole economy through the wringer to abort asset bubbles is not compelling—the output losses are substantial and there are better ways to do it, though they contradict market fundamentalism (Canterbury 2000; Stiglitz 2004). But if the assets are bubbling up from a witch's cauldron of ratings euphoria, principal/agent breakdowns, and widespread fraud, then central bank cheerleading about the marvels of the market is really just background noise to a march of the lemmings.

And Greenspan's relentless championing of deregulation was, indeed, the most profoundly disastrous component of his legacy as Fed chair. As he took over the reins at the Fed in 1987, earlier steps toward deregulation were already triggering an Oklahoma land rush into profitable areas of finance by all sorts of "nonbank" financial and commercial loan companies (Partnoy 2003). Though student loans and other forms of consumer finance attracted important players, most of this emerging "shadow financial system" trafficked in home mortgages (Muolo and Padilla 2008). Greenspan declined to make the slightest effort to rein in the new players and refused to employ regulatory powers that the Fed certainly possessed. His nonchalance promoted a broad decline in loan standards and bank behavior, while

also encouraging the financial system to leverage itself to the hilt. The combination was lethal: The Fed let risky assets invade more and more of the system, as Wall Street and the banks took on unprecedented levels of risk. The consequence was that when short rates—the ones Greenspan indubitably controlled—started to rise and the bubble popped, the whole impossibly leveraged house of cards inevitably came tumbling down.

Greenspan's defenders frequently respond that the Fed controlled only banks that the Fed itself regulated and thus can hardly be blamed for the wild behavior of the rest of the shadow financial system.[14] It is true that the Fed was not principally responsible for regulating nonbanks, mortgage companies, or even much of Wall Street; all of these reported to a crazy quilt of regulators. The Securities and Exchange Commission (SEC), for example, had charge of investment banks and brokerage houses; thrifts were supervised by the Office of Thrift Supervision; many other banks were supervised by states or the Comptroller of the Currency.

Under both Democratic and Republican presidents, all the federal agencies responsible for regulating finance were usually as firmly in the grip of market fundamentalism as the Fed (Partnoy 2003). But Greenspan was not just another regulator, though it might have looked that way in the 1990s as he sat around the table with other members of the President's Working Group on Financial Markets, the federal interagency group responsible for hammering out broad policy on financial markets. The maestro ranked indisputably as first among equals. He was the heavyweight who regularly met alone with the president or, after Bush succeeded Clinton, with Vice-President Dick Cheney and the president (Gellman 2008).

By the mid-1990s, indeed, Greenspan was deregulation's Dalai Lama, the central totemic figure of the entire world economy. Had he mounted even a feeble campaign for some limits, he would almost certainly have prevailed. Other regulators and policy makers could not have disregarded urgent warnings from him that particular loan practices posed risks to the system as a whole. For example, the furor would have been tremendous if Greenspan had stood up for the rights of state regulators to move against deceptive loan practices of nationally chartered banks when the Office of Thrift Supervision and the comptroller moved to block them from doing this (Andrews 2007).

In fact, however, the Fed chair strongly opposed all serious regulatory initiatives, even antifraud measures (which he claimed would be naturally controlled by market refusals to do business with crooks).[15] As complaints about mortgage abuses flooded in during the 1990s—they exploded after 2001—Greenspan responded by denying that the Fed possessed authority to regulate mortgage issuance by nonbanks (Andrews 2007; Partnoy 2003).[16] This was blatantly untrue. The 1994 Home Owners Equity Protection Act, passed in response to abuses of the savings and loan crisis, specifically gave the Fed substantial regulatory authority over mortgage lending. In 2000, Edward Gramlich, another Federal Reserve Board governor and himself a distinguished economist, warned Greenspan about rampant mortgage lending

abuses. He urged the Fed chair to dispatch federal bank examiners to inspect the mortgage affiliates of national banks (Andrews 2007).

Here there was no question of Fed authority—Greenspan simply demurred. Eventually, Gramlich went public with his warnings and published a prophetic book before dying of cancer (Andrews 2007; Gramlich 2007). Yet even as lawsuits from all the hanky panky by ratings agencies, accountants, and financial houses during the first bubble were being settled, Greenspan still professed to see no reason for new regulation. He and most other federal regulators held fast to that position in the face of steady reports of abuses by lenders. These included secret payments to mortgage brokers to step up clients into more expensive subprime loans or ARMs that reset as the Fed raised rates; "balloon payment" schemes that virtually guaranteed default; "stated income" loans with no checks of claims about buyer's incomes; and "ninja" loans.[17] Eventually, in 2007, long after Bernanke took over, the head of the Fed's Division of Banking Supervision and Regulation backhandedly admitted to Congress that the Fed "could have done more sooner" against deceptive practices (McKenna 2007).

In the case of Wall Street, the excuse that the Fed regulated banks and not investment houses once again diverted attention from Greenspan's role in dismantling regulatory barriers. Traditionally the Fed and Treasury were regarded as the watchdogs of the twenty or so firms that were "primary dealers" in government securities. The Fed's relationship with primary dealers was considered especially tight, because they were the conduit through which the Fed open market operations affected the rest of the market. By the late 1980s, as a result of attempts by traders at Salomon Brothers and other major houses to rig government bond markets (Partnoy 2003), oversight of government securities dealers was a front burner regulatory issue.

Under Greenspan, the Fed fiercely resisted stronger regulations. It moved very deliberately to put itself out of the business of regulating primary dealers, even as it backed a fateful amendment to the Federal Reserve Act that allowed it to open its discount window in emergencies to a wide range of institutions, including investment banks.[18] Highlighting the importance of making it "absolutely clear to the marketplace that the Bank does not regulate the primary dealer firms," the Fed abandoned any pretense of "dealer surveillance" in favor of "market surveillance." Just in case anyone missed the message, the New York Fed dissolved its "dealer surveillance unit" (Corrigan 1992).

Virtually all major investment and commercial banks were primary dealers, including, by 2004, even Countrywide Credit, the largest home mortgage producer in the country.[19] If Greenspan had not thrust aside the Fed's authority, its traditional oversight prerogatives might have been just what the doctor ordered to avert debacles like Bear Stearns and Lehman. Instead, the Fed did not even fulfill the weaker supervisory mandates it claimed it would exercise when it revised its policies toward primary dealers.

Deregulation, Falling Yields, and Complex Derivatives—A Lethal Combination

Deregulation let financial institutions take excessive risks. But it also encouraged them to do so and thus amplified the risks. Early in the new century, as returns on long bonds declined, this "moral hazard" aspect of the deregulation Greenspan championed assumed new and sinister dimensions.

The first signs of the fall in yields showed up during the Clinton years, as the administration's "strong dollar policy" led Asian exporters and other large dollar holders to recycle their earnings into dollars and, often, peg their exchange rates to the U.S. currency. At the time, Treasury secretary Robert Rubin and other officials touted this development as proof of the wisdom of their policy. After 2001, however, Chinese growth and exports to the United States exploded. Many developing countries also sought to accumulate massive dollar reserves to forestall any chance they would ever again be forced to turn to the International Monetary Fund (IMF) and U.S. Treasury for assistance, as they had during the East Asian and global financial crises of 1997–98 (Stiglitz 2003). As a result, the stream of recycled dollar earnings swelled into a raging torrent. Yields on long bonds fell sharply, eventually falling from about 8 percent to just over 3 percent by mid-2003 (Warnock and Warnock 2005).

For American businesses and investors with money to invest, the drop in yields was painful. Squeezed by the bursting of the stock market bubble and pension shortfalls and longing for the golden age of the late 1990s, investors looked around for something better.

The result was a fierce reach for higher yields. Wall Street responded by pressing deregulation to new extremes, which put the nascent shadow financial system on steroids. This new financial system displayed two distinctive institutional features. First, short rates—the ones Greenspan did control—were peculiarly crucial to its highly leveraged functioning. The name of the game was "maturity transformation," in which institutions took advantage of the Fed's low and predictable interest rate policies to refinance themselves cheaply as they chased longer, higher-yielding financial instruments. Second, over time, in a series of steps so small as to be all but imperceptible, the system gradually left the orbit of actually existing market capitalism.

This latter feature is crucial and perhaps the least appreciated aspect of the current crisis. Of course, the irony is towering: At the very moment that American elites were celebrating the fall of the Berlin Wall, "the End of History," the collapse of the USSR, and the final triumph of capitalism over communism, deregulation was leading the higher reaches of the new shadow financial system away from free markets and the price system. They substituted instead a novel version of planning—one at least as daringly utopian as anything ever cooked up by the USSR's legendary Gosplan.

The instigators of this development were the highly quantitative "rocket scientists" working for hedge funds and investment and commercial banks that did

business, at least metaphorically, on Wall Street. By 2001, as the search for yield intensified, these Masters of the Universe saw themselves and were regarded by the rest of the world as the greatest financial engineers of all time—financial counterparts of Ferdinand de Lesseps, George Washington Goethals, and John G. Roebling. (In retrospect, the comparison to Roebling is uniquely appropriate: He built the Brooklyn Bridge.)

The critical new technology that they dominated was that of "securitization." This had begun to flourish in the early 1980s, as Salomon Brothers and a few other firms started growing new lines of business (Kregel 2008; Lewis 1990; Partnoy 2003). Their idea was to take financial obligations that were typically held to maturity by original lenders—such as housing loans made by thrifts or savings banks—and sell them off to somebody else. The thrift got fresh money to make another loan; some happy investor got a bond he or she could treasure; and Wall Street got a handsome fee. The first products of this new "originate and distribute" model of finance were not terribly complex, though at the time they were trumpeted as marvels almost on par with the engines of Archimedes. Mostly they were mortgage-backed securities (MBSs), a species of the broader genus of asset-backed securities (ABSs), though credit card receivables, student loans, and other consumer liabilities could be similarly treated.

Legal forms and economic specifications became increasingly baroque over time. Yet mortgage-backed securities (MBSs) were in their essence straightforward. They represented pools of mortgages, ideally from different parts of the United States to add diversification, that the issuing house put into one receptacle (usually a "trust," though again, legal practice became increasingly complicated), against which it then issued a bond. As in so many other cases of private sector innovation, the role government played in the early years was crucial. Mortgages guaranteed by various federal government agencies particularly lent themselves to pooling, because the government rather than private investors assumed all default risk. Bonds guaranteed by Freddie Mac and Fannie Mae helped gain investor acceptance for the broader concept and added liquidity to the market (Kregel 2008; Muolo and Padilla 2008).

Technically, these securities qualified as "derivatives," because their values "derived" from the behavior of financial instruments underlying them—in this case, mortgages. Relatively simple, "plain vanilla" derivatives, however, had a drawback from an investment banker's perspective. They were fairly easy for other Wall Street houses to copy. Low barriers to entry meant low margins of profit. Trading derivatives on exchanges was therefore unappealing. The rocket scientists—specialists in statistics and advanced mathematics—quickly set to work. They learned to construct bonds with dazzlingly complex properties by layering different types of financial obligations on top of each other. These more complex securities traded mostly under the generic name of collateralized debt obligations (CDOs). Often their legal structures were almost as complicated as the intermingled payment streams that constituted them.

It was at this point that Wall Street found it expedient to emulate Gosplan. Even for plain vanilla derivatives, the time required to work out the economic value of their payment streams was nonnegligible. It took a mainframe computer hours to run the calculations on MBSs in the late 1980s (Kuznetsov 2006). In the 1990s, the advent of desktop computing enormously cut computing costs, but it also encouraged the rocket scientists to run amok. Indeed, in retrospect, the advent of desktop computing was key to the overwhelming information asymmetry that defined the whole phenomenon. It gave designers the power to manufacture Rubik's Cubes so complicated that even another desktop could not unravel them. In the race between complexity and calculation on Wall Street, accordingly, there was one sure winner: The house making the market. More complex products were harder for competitors to imitate. Thus margins were higher (Partnoy 2003).

CDOs rapidly became so complex that most could not be sold on any existing market or via any bidding process. Instead, houses negotiated properties and prices, one by one, in what was euphemistically termed the "over the counter" (OTC) "market." In fact, however, there was no market. All there really was were model prices. There was no process of trial and error price discovery; the models were treated as perfect, or at least better than any alternatives. "Mark to model" supplanted "mark to market."[20] Capital standards became meaningless, as prices did not reflect markets and could be set to minimize required capital set-asides.

Doing business in this way lowered a shroud of stygian blackness on relations between buyers and issuers, which, of course, was the idea. Nothing leaked out, except by accident. Financial houses, which were soon issuing derivatives on derivatives that blended all sorts of currencies and maturities, had no incentives to broadcast what was going on. The tight little oligopoly of top ("bulge") bracket firms that had dominated investment banking for two decades (Augar 2005), plus a few large banks and hedge funds (which did not originate them, but did ask clients to invest in them), found itself in the position of medieval doctors prescribing to credulous patients: Who were the Treasurers of Orange County or Proctor & Gamble to argue with models that only rocket scientists of the issuing houses could explain or even understand?[21]

Alarm bells, nonetheless, did ring. Laws and financial regulations in many jurisdictions—such as state blue sky laws placing limits on securities that could legally be sold—required changing for mortgage bonds to take off (Lewis 1990; Muolo and Padilla 2008). All the lawyers, political contributions, and lobbying this required attracted some (not much) attention. The sheer proliferation of OTC derivatives fanned anxieties, simply because no outsiders knew much about them, save that their use was huge and growing exponentially (Partnoy 2003). More complex derivatives posed potentially graver challenges, because accounting rules for investment banks required them to mark their assets "to market" every day. How was this to be accomplished when there was no market? In addition, independent analysts readily perceived that the daisy chain of derivatives that coiled through Wall Street could snap disastrously if somebody defaulted. A series of explosions—

default by Orange County, California, the collapse of Baring Brothers, a gigantic loss by Proctor & Gamble, finally, the bankruptcy of Long Term Capital Management, eventually even school system collapses—made it obvious that many buyers and sellers had no clue what they were really transacting.[22]

All through the 1990s, however, whenever anyone attempted to regulate derivatives, or even just collect information on them, a howl went up from Wall Street. Greenspan and one or more of the era's other paladins of deregulation and free markets would step up to lead the defense (Prins 2004). In many cases, joining the Fed chair was Treasury secretary Robert Rubin, originally from Goldman Sachs, who had played a pivotal role in fundraising for President Bill Clinton's election (Canterbury 2000; Ferguson 1995b; Ferguson 2001; Prins 2004). Nearly always, too, came Senator Phil Gramm (R-TX), whose wife, Wendy, as chair of the Commodities Futures Trading Commission (CFTC), played a key role in preserving the so-called swap loophole exempting credit default swaps (a type of derivative that spread like wildfire) from regulation, before making a munificently rewarded exit to the board of Enron, where she graced the audit committee almost to the corporation's final days (Prins 2004). (Eventually Gramm himself retired, too, becoming vice chair of UBS, the giant investment house.) Senator Charles Schumer (D-NY) emerged as a leading voice of Wall Street among Democrats, along with Rubin's deputy and eventual successor at the Treasury, Lawrence Summers (Lipton and Hernandez 2008; Prins 2004).

In 1998 only an extraordinary joint statement issued by Greenspan, Rubin, and Arthur Levitt, an SEC chair with a curious public image as a tough regulator (Partnoy 2003; Prins 2004), saved the swap loophole from skeptical regulators and lawmakers. Rubin, Summers, and Greenspan also pressed the cause vigorously behind the scenes, with Rubin at one point flaring angrily at CFTC chair Brooksley Born, who wanted at least to start gathering information (Leising and Runningen 2008). Schumer and Gramm worked overtime in the Senate, as Wall Street showered both with campaign contributions.[23] In the end, the triumph of the new planning system's defenders was complete: Derivatives were left almost entirely unregulated, even after the Long Term Capital Management fiasco pointed up their dangers for all to see. In practice, investment houses marked to market by marking to model (thereby avoiding precautionary capital set-asides), just like hedge funds, banks, and insurers, which also dealt in derivatives.

The long battle of Greenspan and his allies to block regulation of derivatives gave the rocket scientists the legal and social cover required to satisfy the clamor for yield after 9/11. The rocket scientists brewed up ever more complex, high-octane derivatives out of CDOs, mixing paper rated AAA—the highest quality—with various layers ("tranches") of inferior grade securities that paid higher rates, precisely because they were riskier. They also built more and more CDOs out of CDOs (creating "CDOs squared" or "cubed") and fabricated "synthetic CDOs," in which so-called credit default swaps—effectively insurance contracts on bonds, though regulators and markets pretended otherwise—substituted for the mortgage bonds (Partnoy 2003; Sommer 2008).

Sets of nested structures similar to Russian dolls resulted. In the new securities, it was quite possible for tranches of lower-rated paper to end up superior to other, originally more highly rated tranches (or vice versa) because of their placement in a higher-ranking doll (Gorton 2008). Market participants suggest that this happened frequently with so-called mezzanine debt (the tranches originally rated between AA and subprime), where protection was supposed to come from "overcapitalized" lower tranches of the same broad class of debt. Such ingenious constructions made it all but impossible for anyone to sort through their precise exposure to any particular set of mortgages (Gorton 2008).

Still, voilà! By a bit of statistical magic, involving specious appeals to recent historical data ("short time series"), airy references to "bell curves" that fatally underestimated "tail probabilities" of disaster, and no consideration of what would happen if everyone tried to sell at once, the whole ended up worth more than the sum of the parts (Sommer 2008). Rating agencies and accountants whose businesses depended on pleasing the issuers rather than buyers of securities decided not to challenge claims by the rockets scientists that defaults on these complicated securities would be as rare as black swans.[24] When skeptics started a clamor for SEC oversight of the ratings agencies, Senator Schumer, as always awash in contributions from Wall Street, led a successful blocking action (Lipton and Hernandez 2008).[25] Essentially everyone in the markets found it in their interest to agree that despite the layers of lower-grade paper (soon to become notorious as "toxic waste") they contained, most CDOs were safe at any speed. Often skeptics were reassured by purchases of still other derivatives, "credit default swaps," that obliged houses writing them to pay the buyer in the event a black swan strayed by.

Wall Street, the White House, Everyone Else's House

Investors snapped up the Street's latest brainstorms, returning Wall Street to the heady days of the late 1990s. Now the Street's problem became finding steady supplies of the basic securities that the rocket scientists required to brew their concoctions. Almost any form of debt could be securitized and, by 2002, almost every form of it was, from credit card receivables to student loans. But with house prices taking off as long rates plunged, the obvious winning ticket was mortgage debt.

This, and only this, generated a powerful, self-reinforcing feedback effect across the United States. Banks, thrifts, and the vast array of "nonbank" specialists in housing finance pushed mortgage loans. Americans dreaming of owning their own home or just looking out for lively speculative plays heard the call of the wild. They took out mortgages and bought houses. All the buying drove up home prices, which made refinancing, trading up, or joining the crowd chasing rising home prices all the more attractive. The results were additional rounds of mortgage making and further jumps in home prices (Muolo and Padilla 2008; Shiller 2008).

With sales of mortgage derivatives soaring, vertical integration of all phases of the manufacture of complex derivatives became attractive to Wall Street. Before

1999, the Street's efforts to dominate the production of home mortgages themselves would have been difficult. The previous year, however, Greenspan, along with Rubin and Gramm (whose name was on the bill), had led a charge to repeal the last vestiges of the fabled Glass–Steagall Act, which walled off investment from commercial banking and both from insurance. Massed behind them was a phalanx of financial houses, including Citigroup, which had put through a merger with Travelers Insurance that would be legal only if the law was changed within a year and a half. Treasury secretary Rubin lobbied for the bill and then resigned. A few months later he accepted a senior position at Citigroup (Prins 2004). An exceptionally well-conceived statistical analysis also indicates that a wave of cash contributions from the financial industry helped change the minds of members of Congress previously opposed to repeal (Stratmann 2002).

The new law allowed banks to organize as holding companies and run separate subsidiaries that could pursue just about any line of financial business. Because it was soon obvious that regulators did not care and that mortgage banking was a critical link in the food chain connecting Wall Street to the shadow financial system, Wall Street and major Americans banks began acquiring nonbanks, thrifts, and other lenders that dominated mortgage markets (Muolo and Padilla 2008). Their entry coincided with a data processing revolution that enhanced the role of economies of scale and worked powerfully on its own to concentrate the industry (Pafenberg 2004). Later, after the bubble burst, House Financial Service Committee chair Barney Frank would claim that nonbanks were responsible for most of the mortgage abuses (Howe 2008). This may have been true at the start, but by 2006, this was clearly false: Of the top fifteen subprime firms in the United States, eight were owned by banks (Muolo and Padilla 2008). The new owners clearly did not disrupt profitable routines, however ruthless: Even Greenspan's somnolent Fed was eventually compelled to hit Citigroup with a $70 million fine for rank abuses of low-income and high-risk borrowers at its mortgage affiliates (O'Brien 2004).

As the shadow financial system's smaller creatures disappeared into their maws, Wall Street and the big banks sought command of yet more capital. Once again, the presumption in favor of deregulation came disastrously to the rescue. By the late 1990s, virtually all of the old private partnerships that once dominated Wall Street had turned themselves into public companies able to tap "other people's money" by issuing stock (Augar 2005; Prins 2004). Even Goldman, long a holdout, had succumbed. Thereafter, bringing in new capital the old-fashioned way came with a high price: Issuing new shares would dilute existing shareholders, who were—in happy accord with the new doctrine of aligning interests of managers with owners—extensively the investment bankers themselves.[26]

Thus the Street scouted ways around regulations limiting the amount of leverage firms were allowed to take on. Because leverage expresses the relationship between what financial institutions own and what they borrow, it did not take them long to realize that they could once again turn the Fed and SEC's indulgent attitudes toward "financial innovation" to advantage. The big firms talked up "self-regulation" and

pushed to relax long-standing SEC rules on "net capital" requirements that would allow house rocket scientists to decide on their own when leverage was excessive.

At the time, the European Union was threatening to impose new regulations on U.S. investment bank operations there. The investment banks accordingly sought regulatory relief that would both satisfy the European Union and lower their capital requirements (Lebaton 2008). In 2004, the SEC succumbed to the siren song and issued a new rule allowing the large firms to employ internal "mathematical models to calculate net capital requirements for market- and derivatives-related credit risk" (Colby 2006). This led to a sharp jump in leverage measured in a traditional way, that is, in terms of what actually appeared on firms' balance sheets, from twelve to one to about thirty-three to one (Blinder 2009).

A second, equally fateful approach to garnering the fruits of deregulation involved an appeal less to rocket science than to the legacy of Houdini. It came from the pages of a playbook the banks knew by heart from the stock market bubble. At that time, Citigroup, JP Morgan, and other big banks had helped Enron set up specially designed off balance sheet entities that allowed the energy giant to shift assets around in ways that enhanced its reported performance. Many of these vehicles—Raptor, LJM2, Osprey, Rawhide—subsequently became notorious. The key to their success was bringing in enough outside capital to qualify them as legally independent of the company that set them up and really controlled them. By the late 1990s, the amount of independent funding that regulators required was not much. In fact, it was almost microscopic: 3 percent (Partnoy 2003; Prins 2004).

The "3 percent solution," of course, had not dropped from the sky. It had been contrived by the Financial Accounting Standards Board (FASB), a totally private group representing financiers, accounting firms, auditors, and other mostly business-related groups. In a parody of the neoliberal approach to (de)regulation, the SEC had obligingly delegated its job of proposing accounting standards to this group. So, in practice, had Greenspan's Fed (Partnoy 2003).

After Enron, however, even the SEC had had enough. In 2002, it began pressing the FASB to reform the standards for "qualified special purpose entities" to prevent recurrences of what had happened with Enron. Greenspan and the Fed, however, did not share the SEC's urgency. Instead, the Fed "pressed [FASB chair Robert H.] Herz to slow down" (Fink 2004). The FASB responded by urging the SEC and the Fed to come to agreement on reforms and a timetable for their implementation. With Greenspan proclaiming, "Market participants usually have strong incentives to monitor and control the risks they assume in choosing to deal with particular counterparties. . . . Private regulation generally is far better at constraining excessive risk taking than is government regulation," this was not easy (Greenspan 2003). Negotiations dragged on for years. In the end, they produced weak, complicated proposals for reform, which were then phased in only slowly. It was too little, too late to prevent the explosion of new special purpose entities that helped integrate Wall Street and the major banks with the shadow banking system and added a fatal new degree of risk.

Taking advantage of the Fed's laxity, banks began setting up so-called conduits

and "structured investment vehicles" (SIVs) in great numbers (Tett and Davies 2007). These all basically had the same structure, despite wide differences in details. They had enough outside capital to qualify as independent of the bank (or investment house or hedge fund) responsible for setting them up. The new entity would finance itself by taking a loan from the bank and issuing commercial paper or other forms of short-term debt requiring frequent trips back to the market for refinancing. Because the new entity held "liquidity puts" that committed the originating bank to take back the CDOs in the unlikely event a refinancing problem ever developed (Jones 2007), the conduits and SIVs qualified for the same sterling credit rating as the bank itself. Through the black magic of efficient markets, the good name of the banks helped the SIVs, but the risks of the SIVs did not redound on the banks. Money market funds were thus able to join the party and get in on the promised supercharged returns (Eavis 2007). The SIVs and conduits, now flush with cash, would buy vast amounts of CDOs and other derivatives from the originating bank, paying hefty fees in the process. Investment banks, such as Bear Stearns, did roughly the same thing, often setting up hedge funds that then borrowed from either banks or their prime brokers to buy CDOs.

In effect, these wonders of deregulation allowed the originating institutions to securitize themselves, relying mostly on short-term money that did not show up on their balance sheets. By these maneuvers banks gained operational control of billions of dollars of additional assets that were unknown to regulators, at least officially. It was as though the stars of Wall Street were spinning off solar systems of their own that the benevolent astronomers at the Fed and SEC did not want to see.

There was one catch: Many banks promised to take at least some of the CDOs back on their balance sheets if a black swan ever showed up and refinancing at market rates proved impossible. But scarcely anyone really expected these "liquidity puts" would ever be exercised. The rocket scientists had precisely calculated the probability of disaster, and that, they assured everyone, was minimal. They had the world's most sophisticated models to prove it.

The Black Swans Arrive: From Denial to the "Paulson Put"

In practice, the conduits and SIVs frequently operated with layers of additional leverage (Salmon 2007), so that astonishingly large sums of borrowed money often ended up pivoting on minute amounts of capital—ratios sometimes ran as high as a 100 to 1. This made these vehicles very brittle: A slight downturn in the value of the CDOs they held could wipe out their owners' equity. The toxic mix of high leverage and tiny capital increasingly left the American financial system resembling the last scene of Bergman's *Seventh Seal* where Death "leads away over the horizon a dancing chain of victims from every walk of life, breaking the medieval hierarchy of the estates and the division between clergy and laity in one awful democracy."[27]

Yet as long as Alan Greenspan chaired the Fed, suggestions that disaster might

lurk somewhere around the corner were dismissed. For a long time, the maestro argued that the increases in housing prices largely reflected economic fundamentals. Later, as prices kept on soaring, he did allow the presence of some "froth" and acknowledged that "local bubbles" might be troubling certain areas. But he rejected notions of a nationwide housing bubble and even indicated that the gentle series of interest rates rises he began orchestrating in 2004 might be just the tonic needed to take care of these problems. Many of his listeners also drew comfort from the frequently repeated observation that since the New Deal, there had never been a year in which housing prices fell all across the United States.[28]

After Greenspan left the Fed, the happy talk continued. By then, the percentage of mortgage loans that were "interest only" (i.e., permitted debtors not to amortize the loan), "payment optional" (i.e., one could pay nothing and roll the whole missed payment into the loan), or just plain subprime and sliding into arrears had started rising (Demynyak and Hemert 2008; Krinsman 2007; Muolo and Padilla 2008), as had overall consumer indebtedness (Foster and Magdoff 2009). Still, Greenspan remained upbeat. In 2006, while acknowledging signs of weakness in housing, he told the *Washington Post* that "it looks as though the worst is behind us" (Henderson 2006). Other officials were equally sanguine. At the time he was named Greenspan's successor, Ben Bernanke echoed his predecessor's "strong economic fundamentals" line, with no reported qualms about possible "froth" (Henderson 2005). In July 2007, just before markets collapsed, William Poole of the Saint Louis Fed forecast that "the problems would not impact consumer spending or credit quality more generally" (Felsenthal 2007).

Official optimism persisted as interest rates continued to rise slowly. In parts of the United States, home prices finally began to level off; then they started heading down (Demynyak and Hemert 2008; Shiller 2008). Whether this happened because the Fed's rate rises were biting, local economies were cooling, or mortgage companies were exhausting local pools of borrowers hardly mattered. Once the bubble started to burst, everything changed. With home values sinking, owners with little or no equity had incentives to toss the keys into the mailbox and walk away ("jingle mail" as it was quickly christened). Studies of default rates, however, suggest that such cases were rarer than often imagined. Most defaults even in the exploding subprime category occur because of shocks to the mortgage holder's income, such as job loss, illness, or divorce, that overwhelm overstretched borrowers. Home equity values work alongside that variable, with default probabilities rising as equity goes negative (Foote et al. 2008).

The rising rates of default sounded the crack of doom, whether or not the Fed, Greenspan, Treasury secretary Paulson, or anyone else wanted to hear it. Lenders could no longer easily resell; they had to absorb real losses. More importantly, however, mortgage defaults soon rose to a point where they threatened the stream of payments that sustained all the high-grade derivatives. As these weakened, the complex rules governing how the various tranches of CDOs paid out began to kick in, threatening or actually triggering defaults (Gorton 2008).

Now began the downward spiral of credit refusal and "deleveraging" that gradually engulfed the world. The higher circles of American finance, at first gradually, then with a rush in the late summer of 2007, awoke to the fact that their CDOs were not worth what the models said they were, because payment streams were faltering beyond anything predicted. But the complexity, secrecy, and absence of market prices for these derivatives meant that there was no easy way to ascertain what they were now worth. Even if investors wanted to, the design of CDOs, not to mention CDOs squared and cubed, made it all but impossible to ascertain what was inside all the Russian dolls brimming with mortgage bonds. The ABX index, which some investors relied on to hedge risks, is simply a representative index of twenty common mortgage securities; it is an idealized portfolio that no actual person normally invests in. Essentially, holders of CDOs were now in a position analogous to that of a factory making specialized components in Russia as the Soviet Union collapsed. Outside of Gosplan, the output made no economic sense at all.

With even large houses with big investments in controls unable to solve the pricing conundrums, panic took hold. Houses that were uncertain about their own position knew they could not reliably judge anyone else's. A general scramble for liquidity began in which even interbank markets like London Interbank Offered Rate (LIBOR) which usually function even in crises, started locking up; so did markets for commercial paper, which made it impossible for conduits or SIVs to refinance. Cash-short investors then dumped whatever assets they could to raise money, leading to a downward spiral of declining asset values, further sales to get money, and so forth. The now mortally threatened conduits and SIVs exercised their liquidity puts to force banks to take back onto their books the complex derivatives that they had sold them. Of course, this placed banks and hedge funds under even more stress. Some insurance companies, hedge funds, and other investors who had bought CDOs may also have tried to force the originating institutions to take back the toxic waste, in some cases threatening reputational damage or simply to move their business elsewhere.

As late as August 2007, the Fed continued to act as though inflation was the biggest threat to the American economy (Uchitelle 2008). But market reaction to Bernanke's decision on August 7 to hold rates steady was brutal. The stock market swooned; the dollar fell. A broken trail of evidence suggests that neither Bernanke nor Paulson fully appreciated the danger to the economy as a whole, but they quickly got the message that Wall Street and America's greatest banks were in peril.[29] Both the Fed and the Treasury abruptly switched gears. Still cautioning against proposals from the Democratic Congress to bail out homeowners, Bernanke and Paulson now began improvising a strategy for getting help to the banks that would not attract attention.

From the Greenspan to the Paulson Put

The Treasury secretary and the Fed chair knew, like everyone else in the markets, that chances for success hinged on cooperating with each other. If markets sensed

that their two institutions were working at cross-purposes, the response would be swift and disastrous. But their positions were not institutionally equivalent. The secretary of the Treasury was part of the president's team, formally partisan, and by design responsive to direct political pressures. By contrast, the Fed had a more restricted range of action and was formally nonpartisan. Indeed, in the mythology, it was nonpolitical. Although the president could fire Paulson at any time, he could not dismiss Bernanke once he had appointed him. Traditional banking crisis doctrine assigned to the Treasury chief the responsibility for bailing out banks, on the excellent grounds that backdoor bailouts by central banks were hard to police and even harder to stop before they started inflating the currency. The traditional view thus insisted that Congress and the president, acting through the budget process, shoulder responsibility for bailouts.[30]

This defined the problem that the "Paulson Put," as we call it, was designed to overcome. For the president and Congress to assume responsibility for bailouts was fine in theory. But the Republicans had only recently been mauled in the 2006 midterm congressional elections. Having lost control of both Houses of Congress, they now faced a housing crisis of their own: losing the White House. The Republican Right was on a tear about spending. Even more seriously, income distribution had at last emerged as a public issue. In the face of years of propaganda about the "magic of the marketplace," the spectacle of the U.S. government pouring in large sums of money to rescue institutions controlled by America's most affluent citizens promised to be toxic. Neither party's leaders were likely to be enthusiastic; but because Republicans would be making the key decisions in the White House and Treasury, the brunt of the blame figured to fall on them.

The Shadow Bailout: Federal Home Loan Banks

Paulson and Bernanke, accordingly, evolved a two-track strategy for getting out of the crisis or, to be precise, for rescuing Wall Street and the banks. The Fed, whose every move in money markets was closely scrutinized, at once took measures that were customary for central banks, or at least the U.S. central bank, in these situations. It cut rates sharply—once even by a startling three quarters of a point—and talked up cooperation with other central banks, which were now discovering that many financial houses in their own countries had also been drinking the Kool-Aid of "riskless" CDOs.

Paulson's moves, by contrast, were much more circumspect. Indeed, at times he virtually disappeared from public view. Behind the scenes, however, he was very much engaged. Formally or informally, the Treasury Department was the dominant force in a network of lesser-known financial agencies that collectively commanded massive financial and regulatory resources that could help distressed financial houses. Paulson, as head of Treasury and—in this case perhaps more importantly—informal head of the administration's economic policy making apparatus, could thus preside over a gigantic Shadow Bailout of the vastly overextended

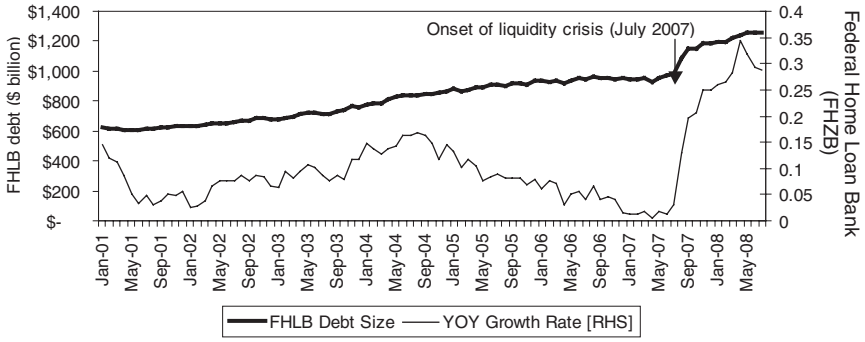


Figure 1. **The Shadow Bailout: Total Outstanding Federal Home Loan Bank System Debt**

Sources: Citigroup, from Federal Home Loan Bank (FHLB) and Federal Deposit Insurance Corporation (FDIC) data.

Table 1

Advances to Seven Large Banks

Year	Total	Subtotal large	Large %
2005	619880	127096	20.50
2006	640681	178874	27.92
2007Q1	624418	190724	30.54
2007Q2	640035	191630	29.94
2007Q3	824000	263545	31.98
2007Q4	875061	261753	29.91
2008Q1	913104	265922	29.12
2008Q2	913897	256424	28.06

Sources: FHLB and FDIC.

shadow banking system with public money that almost no one tracked. With most of the media and even the markets fixated on the Fed, his first move was simple: Sit back and watch quietly while regional federal home loan banks shoveled billions and billions of dollars out to banks and mortgage companies, including many of America's largest.[31]

Figure 1, with its associated table, tells the story. In the late summer of 2007, as the housing crisis snowballed into the credit crunch, the balance sheet of the federal home loan bank system exploded. As the figure indicates, lending in the

form of advances and other purchases of mortgage-related securities increased sharply. The aid went not only to the small banks or thrifts that were traditionally regarded as the system's clients but also—as the table shows—many of the very largest financial institutions in the United States.[32] The colossal dimensions of this Shadow Bailout, which drew little notice in the national press (and no discussion in presidential campaign coverage), are tellingly illustrated by a single comparison. In March 2008, the Fed rocked the world by advancing $30 billion to subsidize JPMorgan Chase's takeover of Bear Stearns. By contrast, in the third quarter of 2007, Countrywide Credit, the nation's largest mortgage institution, borrowed $22.3 billion from the Federal Home Loan Bank of Atlanta. This was on top of $28.8 billion that it already owed the Atlanta Regional Bank.[33]

Most American banks are members of the Federal Deposit Insurance Corporation (FDIC), which insures their deposits. Funds for paying out on that insurance come from charges on banks that the FDIC sets. Amounts vary by need, rising when bank failures proliferate. It is thus the banks themselves that are first on the hook for bank failures.

Since the 1990s, bank failure rates have generally been low; but as housing markets tanked in 2007, it became obvious that they were going to rise. This quickly raised concerns about the adequacy of the FDIC's "insurance fund" (Paletta 2008). The obvious answer—raise assessments on banks—was not politically appealing. They are, after all, massive contributors to political campaigns at all levels (Ferguson 1995b). On the other hand, if they did not pay, someone else eventually would have to. Who was obvious—the public—just as it had after the last election in which waves of banks failed: in 1988. Public discussion of this eventuality, however, was precisely what the Shadow Bailout was designed to avoid.

Paulson and Co.'s solution was to try to slide through the campaign on the audacity of hope and let the FDIC spend down its reserves, while letting current and former FDIC officials explain that the "insurance fund" was backed by the Treasury, which would provide whatever sums were needed (Paletta 2008; Puzzanghera 2008). Lost in the shuffle was the potential shift in the burden of paying, from banks to taxpayers. When everyone's attention focused on the GSE bailout, discussed in the second part of this paper, the Treasury quietly inserted language into the bill removing penalties on Fed loans to failed banks (Evans 2008). This was widely regarded as "a backdoor way to shore up the FDIC" by making it easier to tap the Fed for support (Smith 2008). Eventually, snowballing bank failures (some very large) forced the FDIC to raise charges on the banks. In the bailout legislation, however, the Treasury included not only a much ballyhooed provision raising limits on deposit insurance from $100,000 to $250,000 but also a proviso permitting unlimited loans from the Treasury to the FDIC. The American public, which knew nothing of the "Ricardian Equivalence" beloved by conservative economists, according to which people immediately start saving to pay taxes they know are coming, was left in blissful ignorance, even as bank stock prices fell off a cliff.

By tapping the Federal Home Loan Bank Boards and blurring who would pay

when the FDIC ran through its funds, the Shadow Bailout seemed for a time to be succeeding spectacularly. The press, scholars, and the Washington community let down their guard. Instead of following the money, they focused on the pageantry and drama of the presidential campaign. But even as the Republican candidates cut each other up and Barack Obama started to whittle down Hillary Clinton's seemingly insurmountable lead, Paulson made a fatal miscalculation: He decided to impress Fannie Mae and Freddie Mac into the Shadow Bailout.
[End of Part I]

Notes

1. This paper covers an immense amount of ground. To keep documentation to a manageable length, we pruned references to a minimum.

2. Formally, the Federal Housing Finance Agency took them into conservatorship. For the gross liabilities, see Wolf (2008). The Bear Stearns deal is discussed in the second part of this paper.

3. The literature is already vast, but for the facts cited here, see, for example, Ferguson and Johnson (2008).

4. The best discussion of the bill's political economy is Mian et al. (2008), which is a brilliantly conceived study that separates interest group and constituency interests in novel ways. Even this paper, however, does not do justice to the role financial institutions played in crafting Democratic responses or the final Republican strategy of adding votes by special favors. See our discussion in the second part of this paper.

5. The Brown plan's shortcomings, like the failures of the U.S. Troubled Assets Relief Program (TARP), have come back to haunt the United Kingdom and financial markets. But that discussion belongs in another paper.

6. Universal banks should not be confused with financial supermarkets, as the recent split up of Citigroup suggests; cf. Larsen (2009).

7. See, for example, the gigantic literature on the "New Bretton Woods System" spawned by such papers as Dooley et al. (2004).

8. Cf. the Federal Reserve's weekly H.4.1 series detailing "Factors Affecting Reserve Balances," readily available on the Web site of the Federal Reserve Board of Governors.

9. These are discussed in more detail in the second part of this paper.

10. When someone buys a "put," he or she purchases the right to sell an asset at a specified price. In effect, one is buying insurance against price declines. By extension, the "Greenspan Put" refers to the market's belief that the Fed chair would steer the Fed to counteract large declines in the market. The existence of a "Greenspan Put" was widely acknowledged within financial markets for excellent reasons: Greenspan, in speeches, left no doubt about his intentions. See the discussion in O'Driscoll (2008). But various scholars have questioned the evidence about the Fed's actual behavior. A good review is Buiter (2008). As O'Driscoll (2008) observes, the put is entailed by Greenspan's (and Bernanke's) insistence that the Fed could clean up asset bubbles after they burst.

11. The literature on the stock market bubble is too big to inventory here, but see, for example, Stiglitz (2004). We would not like to be misunderstood on this point. We do not subscribe to any theory of natural rates of interest, and we are skeptical that monetary tinkering is necessarily critical to the formation or cure of asset bubbles in general. (See, e.g., the warning by Shiller [2008] for housing.) The claim here is much weaker: that the Fed's easy money policy helped fuel the stock market boom and, later, the housing boom. In our view, raising margin requirements and regulating the mortgage market would have been superior policy responses to tightening money.

12. Homeowners who took his advice thus lost big, by failing to lock in their chance for low rates. The speech attracted some criticism; Greenspan defended himself by claiming he clarified his position eight days later in another, less heralded speech (Ip 2008). The Fed chair did not take his own advice: He took a fixed rate mortgage on his own house (Dhue 2008).

13. For an explanation of Operation Twist, see, for example, Canterbury (1968). An empirical critique of conventional approaches to central banks' effects on long rates is Seccareccia and Lavoie (2004).

14. So-called conduits and SIVs were also part of the shadow system. These were mostly the work of banks that the Fed was directly responsible for regulating.

15. See Partnoy 2003. Recently Greenspan professed himself shocked to discover that this view turned out to be untrue.

16. In the background here was a wave of deregulatory initiatives limiting the effectiveness of state usury laws. These included not only the Depository Institutions Deregulatory and Monetary Control Act of 1980 (Shiller 2008) but also a series of new laws, rulings by regulators, and court decisions (Hill 2002). These eased the path to untrammeled exploitation of the poor or the ignorant at all income levels.

17. For the secret payments, see Warren (2007); for the other abuses, see, for example, Muolo and Padilla (2008). Gorton (2008), in a paper for the 2008 Jackson Hole Conference that contributes substantially to the technical understanding of how CDOs work, claims that the subprime debacle came about in part from hopes by lenders to advance minority home ownership. The evidence is overwhelmingly against this claim, which in a different form has recently been pushed by various right-wing magazines and think tanks (Gordon 2008). Most lenders that were enthusiastic users of mortgage bonds in the 1980s strongly supported Reagan administration efforts to trim back the Community Reinvestment Act (CRA). It is true that in the mid-1990s, the Clinton administration sought to link fulfillment of CRA requirements by banks to the purchases of GSE bonds, but that effort was watered down by the Bush administration after 2001, just as subprime lending exploded. Even more to the point, though, most subprime loans were made by finance companies and mortgage banks that were not subject to the CRA or banks that only partially were (Gordon 2008). It is clear that institutions not subject to the CRA afforded notably worse loan terms to their clients (Yellen 2008).

18. For the amendment itself, see Todd (1993). There is no doubt that the Fed supported this amendment; authorities in a position to know, indeed, suggest that a prominent Fed official was near at hand as senators considered it, though its text perhaps originated with an investment bank.

19. Countrywide Securities Corporation was the vehicle for the mortgage concern's financing activities.

20.The implication of this for fixing the banking crisis is obvious, if as yet barely thinkable: The absence of market prices dooms naive hopes for finding "the right price" for many of the most troubled assets. As the *New York Times* artlessly relates: "As the new Obama economic team pondered a new approach, one alternative, though an unlikely one, would be to revive Mr. Paulson's original idea of buying troubled assets through an auction process. The potential virtue of auctions is that they could get closer to establishing a true market value for the assets. But the drawback is that many of the securities are so arcane and complex that they are unlikely to generate the volume of bidding needed to establish a real market price" (Andrews 2009).

21. Cf. the plaintive query addressed—too late—by a Pennsylvania school board to J.P. Morgan Chase related in Mysak (2008): "The school-board officials knew they were getting $750,000 for entering into a 'swaption' with J.P. Morgan Chase & Co. They wanted to know what was in it for the bank. They wanted to know the price. They seem like reasonable requests. 'I can't quantify that to you,' the banker told them. 'It is not a typical underwriting and I can't quantify that for you and there's no way that I can be specific on that.'"

22. This point is crucial and points up the fallacy in Gorton (2008), which argues that

the source of the crisis is one type of subprime mortgage contract rather than forms of securitization itself. His claim stands in blatant contradiction to his clear-sighted recognition that information asymmetries between the buy and sell sides of the industry lay at the root of the crisis. These asymmetries show up repeatedly and rest, as he also observes, in major part in the complexity of the product (though, we would note, this interacts with the perverse short-term incentive structures of managerial compensation). As the exchange just quoted between J.P. Morgan Chase and the school board illustrates, mortgages per se were not the issue. Buyers of floating rate notes also learned this expensive lesson, which, of course, played a role in the debacle of the monoline insurers.

23. Both were champion fund-raisers over long periods. See the relevant data collected, for example, at the Web site of the Center for Responsive Politics.

24. References to one type of mortgage contracts, as proposed by Gorton (2008), are clearly inadequate for understanding the failure of ratings agencies and accountants. Here complexity sugarcoated a perverse incentive structure. See, e.g., Partnoy (2003). For the black swan reference, see Taleb (2007).

25. Schumer displayed a real sense of humor here. He and his supporters on Wall Street claimed that competition among the ratings agencies would work better than regulation. But entry into the business is virtually impossible due to regulatory barriers (Partnoy 2003).

26. Several authors have suggested that Wall Street's antecedent conversion to publicly held companies was a key link in the boom, in that the bankers would probably not have been as reckless with their own money. We are doubtful. Partnerships, including predecessors of many famous contemporary investment houses, were leaders in the debacle of the Roaring Twenties (Ferguson 1995a).

27. This quotation comes from an anonymous summary of the movie's plot. As of January 21, 2009, it was available at http://faculty.goucher.edu/eng211/bergman_seventh_seal.htm.

28. For Greenspan, see, e.g., *USA TODAY* (2005), Greenspan (2007a), and Shiller (2008), whose index of housing prices shows that the commonly repeated claims about declines in price are not quite correct.

29. A review of their public statements does not suggest that they fully grasped the seriousness of the wider threat to the economy; but this is open to the perfectly reasonable rejoinder that they may have feared making the situation worse.

30. Cf. Todd (1988, 1992). Our own approach would more strongly stress public goods aspects of the problem. The Reconstruction Finance Corporation (RFC) was in fact the creation first of all large banks; cf. the detailed account, based on extensive archival research, in Epstein and Ferguson (1984). We also regard the Swedish bailout as superior to the RFC, though that was substantially better than later U.S. bailouts.

31. The Treasury secretary's formal authority over the various agencies we discuss here varies; his real influence is also subject to informal pressures and suasion. In practice, however, we agree with Gellman (2008) that Paulson had taken over the reins of economic policy from Vice President Cheney and was the effective head of administration policy making for economic policy.

32. The table sums advances to seven very large banks: Citigroup, Bank of America, Countrywide, Washington Mutual, Wachovia, Sovereign, and Wells Fargo.

33. Calculated from statistics presented in Hagerty and Lublin (2008). Note that the Treasury established a temporary expanded credit line for the federal home loan banks (FHLB) system, with essentially no publicity, the day after the takeover of Fannie Mae and Freddie Mac. More on this in the second part of this paper.

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